

**STRUCTURE AND APPARATUS FOR A VERY SHORT HAUL,
FREE SPACE, AND FIBER OPTIC INTERCONNECT
AND DATA LINK**

ABSTRACT OF THE DISCLOSURE

A low cost, high speed, short haul, optic interconnect and data link which employs an array of vertical cavity surface emitting laser (VCSEL) arrays through which several optical signals are simultaneously transmitted through collimating optics that generate multiple, multiple-wavelength optical signals. Each combined optical signal is transmitted to a receiver array comprising a plurality of optical filters and photodetector arrangements that have a number of sections, each having an optical filter to pass a specific optical wavelength, and a mating photodetector element to convert the specific optical signal to an electrical signal. The signals may be coupled between the transmitter array and the receiver array through free space or through optical fibers.